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Aug 10, 2000

DERWENT-ACC-NO: 2000-532868

DERWENT-WEEK: 200048

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TITLE: Osteogenic paste useful for bone repair in mammals, especially for spinal fusions comprises resorbable carrier, osteogenic factor and mineral particles to provide scaffold

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PATENT-ASSIGNEE: SDGI HOLDINGS INC (SDGIN)

PRIORITY-DATA: 1999US-118614P (February 4, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200045870 A1	August 10, 2000	E	036	A61L027/22
AU 200027564 A	August 25, 2000		000	A61L027/22
EP 1150725 A1	November 7, 2001	E	000	A61L027/22

DESIGNATED-STATES: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
WO 200045870A1	February 4, 2000	2000WO-US03024	
AU 200027564A	February 4, 2000	2000AU-0027564	
AU 200027564A		WO 200045870	Based on
EP 1150725A1	February 4, 2000	2000EP-0905983	
EP 1150725A1	February 4, 2000	2000WO-US03024	
EP 1150725A1		WO 200045870	Based on

INT-CL (IPC): A61 K 38/18; A61 L 27/22; A61 L 27/46; A61 L 27/58

ABSTRACTED-PUB-NO: WO 200045870A

BASIC-ABSTRACT:

NOVELTY - Osteogenic paste (A) comprises:

- (i) a resorbable paste carrier (C);
- (ii) osteogenic factor (I) and
- (iii) a porous particulate mineral (II).

At least 20 vol.% of (A), sufficient to provide a scaffold for bone regrowth as (C) is resorbed.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for an osteogenic implant material (A') comprising gelatin as (C), formulated to be fluid at above mammalian body temperature but to undergo transition to the non-fluid state at body temperature, (I), demineralized bone matrix (DBM) and (II) of average particle size 0.05-5 mm at least 20 vol.%.

ACTIVITY - Osteogenic.

MECHANISM OF ACTION - Osteoblast stimulator; osteoclast stimulation.

USE - (A) Is used to induce new bone growth in mammals, particularly primates and specifically humans, i.e. for treating bone trauma, disease or defects and for forming artificial arthrodeses. Especially it is used to create a spinal fusion (interbody, posterolateral or between transverse processes of adjacent vertebrae).

ADVANTAGE - (A) Has increased osteoinductive potential but, despite the rapid resorption of M induced by (I), it retains a reliable scaffold, of (II) particles, for long enough (e.g. 6-8 weeks) for formation of new bone. (A) is especially effective in bones with only low or moderate vascularization. The paste can be formed into preselected shapes before implantation, or during surgery, and retains its dimensional stability.

The following samples (0.05 ml) were implanted into the rectus abdominus muscle of rats: (1) demineralized bone matrix (DBM) only; (2) Helistat (RTM for absorbable collagen sponge) containing 0.004 mg of recombinant human bone morphogenetic protein-2 (I'); (3) a gelatin/DBM paste, and (4) as (3) but including 0.001 mg (I'). Periodically implants were analyzed. Incorporation of (I'), in (4), resulted in higher, and earlier, alkaline phosphatase activity (indicating infiltration by osteoinductive cells) and better calcification (indicative of bone formation). Higher levels of (I') (0.002 mg) stimulated resorption of the collagen matrix, leading to loss of osteogenic potential.

ABSTRACTED-PUB-NO: WO 200045870A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/2

DERWENT-CLASS: B04 D22 P34

CPI-CODES: B04-B04E; B04-F01; B04-H06B; B04-H06F; B04-H06G; B04-H06H; B04-N02;

B05-B02A3; B11-C04A; B14-N01; D09-C01D;